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Managing Creative Risks

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Managing Creative Risks

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ABSTRACT

Business process management (BPM) has emerged as an important enabler for managing risks. Organizations use BPM techniques such as process modeling to create transparency and to identify process-related risks. Existent risk management frameworks distinguish between different types of risk, such as people, technical, and management risk. Our study suggests that creativity in business processes leads to a particular subset of risks which organizations respond to by applying specific strategies of risk avoidance and mitigation. These creative risks occur within business processes as different people come together to generate creative products. These people bring in different perceptions of creativity and aesthetics and solve creative tasks in different ways. Thus, business processes that involve creativity are characterized by a high variance both in process flow and process outcome which can lead to unwanted consequences. Based on interpretive case studies we introduce the concept of creative risk and explain what strategies organizations can apply to handle it.

Keywords

Business process management, risk, risk management, creativity.

INTRODUCTION

Researchers have been discussing risk management in the light of business process management (BPM) (Remenyi and Heatfield 1996) as BPM has emerged as an important enabler for managing risks. (Zur Mühlen and Rosemann 2005) point out that “Identifying process risks such as data entry errors is of paramount importance to ensure the continuity of business operations and to satisfy compliance requirements generated by legislation such as Sarbanes-Oxley or the Health Insurance Portability and Accountability Act (HIPAA).” Taking on the importance of a process perspective on risk management, we believe that creativity in business processes leads to particular risks which organizations have to respond to appropriately. Creative risks occur within business processes as different people come together to create what can be referred to as creative products. Creative risks occur because of the characteristics of creative tasks as parts of business processes: they are unstructured, the underlying process is hard to predict, they are communication-intensive, they involve both creative and non-creative people and their outcomes are hard to predict. Moreover, these tasks often affect the outcomes of core processes and, thus, the competitiveness of an organization. Paramount examples are processes in classical creative industries such as the film business, but also software development, product development and many more. The creative industries are commonly referred to as an industry that is focused on creating and exploiting intellectual property.

The results of this interpretive research are summarized in a framework representing creative risks and their consequences as well as risk avoidance and mitigation strategies. It is sought that such a framework can serve both practical and theoretical purposes: First, organizations can apply the framework to analyze their creative processes and develop and apply strategies to handle creative risks occurring within these processes. Second, the framework can be utilized as a sensitizing device (Walsham 1995) to enable further research in this area.

The paper is structured as follows. We introduce related work, our research method and our findings we have made within three case studies with organizations from creative industries. The findings are summarized in a framework depicting causal conditions, unwanted consequences as well as strategies to avoid and mitigate creative risk. The paper concludes with a summary and outlook to our future research agenda.

RELATED WORK

Risk and risk management

Risk and its management is an omnipresent aspect of contemporary business reality. This is due to evolving regulatory requirements such as the Sarbanes-Oxley Act and the Basle II Capital Accord (Levine 2004) as well as an prevailing self-conception of corporate decision makers seeing risk taking as an essential aspect of the managerial role (March and Shapira 1987).

Classical decision theory specifies the risk of a decision alternative by its variation in possible outcomes, their likelihoods, and their subjective values (Arrow 1965). This perspective implies that risk is not amenable to manipulation as all alternatives are given a priori and thus decision makers take in a rather passive role in managing them (Benaroch, Lichtenstein and Robinson 2006). A more active role of managers in mastering risk is associated with the behavioral view. Here, bringing risk under control is conceived as a core managerial task institutionalized in the field of risk management. Risk is seen as “the likelihood of a negative outcome” (Levine 2004). Although there are slight differences in the applied terminology for defining risk, most of the definitions are built around a congruent set of core concepts. No matter if risk is defined as “a function of the probability that an identified threat will occur and then the impact that the threat will have on the business process or mission of the asset under review” (Peltier 2004) or the “probability with which an error will lead to an (unwanted) consequence” (Zur Mühlen and Rosemann 2005) it all comes down to the three concepts of an *causal condition*, an *unwanted consequence* and the *probability* that the causal condition leads to that consequence.

In literature, there are numerous approaches to classify risk. Many of them classify risks dependent on a particular context. For example, in the context of business process reengineering Kliem distinguishes between people risks, management risks and technical risks (Kliem 2000). Similarly, Levine introduces the general distinction of operational risk, regulatory/compliance risk, human resource risk, market risk and credit risk (Levine 2004). On an even more generic level Peltier distinguishes three major categories of risk being natural risk, human risk and environmental risk (Peltier 2004). All of these classifications have the human risk subclass in common which highlights its prominent role. The same applies for the context of creative work. Creativity does not exist without and cannot be separated from creative persons. In fact, creative persons are one of the key dimensions of creativity (Firestien 1993) and thus the human factor is a prevalent source of creative risk as well.

In the context of the behavioral view, risk management is a proactive way of coping with the different types of risk threatening an enterprise. It is about putting “controls in place to minimize the negative consequences of an event” (Kliem 2000). “Risk management is a collection of processes, people, and systems aligned for the purpose of measuring, managing, monitoring, and controlling risk exposures.” (Levine 2004) The overall risk management process is composed of the three sub processes *risk identification*, *risk analysis* and *risk control* (Kliem 2000). As a means of risk control several strategies are discussed in literature. For instance, Peltier argues to differentiate between strategies of risk assumption, risk alleviation, risk avoidance, risk limitation, risk planning and risk transference (Peltier 2004). Since risk alleviation as well as risk limitation and risk planning are strategies for reducing the impact of a risk, we follow zur Mühlen and Rosemann by pooling these strategies under the notion of risk mitigation (Zur Mühlen and Rosemann 2005). Thus, in the following we will distinguish the strategies of risk mitigation, avoidance, transfer and acceptance/assumption.

Risk management and business process management

Most risk management projects fail due to a lack of process expertise regarding the process under consideration (Peltier 2004). Risk management as such is widely understood as a process (Kliem 2000; Levine 2004; Peltier 2004) and there is research on risk management in the area of business process reengineering projects (Kliem 2000). However, as the process and risk management communities follow different research agendas and apply dissimilar methodologies, there is only little research on an integrated view on risk and business process management. Thus, zur Mühlen and Rosemann propose integrating risks into business process models. They introduce a taxonomy of process-related risks supporting the process of risk identification for mitigating operational risks and achieving legal compliance. Furthermore, their taxonomy enables to include risks in business process models both at the activity level and the overall process level. They identify risk as “an important business phenomenon, which increasingly has to be considered in the (re-)design of business processes” (Zur Mühlen and Rosemann 2005).

We agree on this position and, therefore, investigate creative risk from a business process perspective. Thus, we investigate the role of creative risks on the task level and on the process level. However, our focus is on characterizing creative risks and discussing strategies both on task level and process level rather than on how to model processes. Nonetheless, we believe that modeling risk is an important enabler for managing creative risk.

Creativity and the creativity-intensive process

As indicated earlier, creative risks are linked to creative tasks that occur within business processes. Business processes that are characterized by the existence of creative tasks – and, thus, of creative risks, we refer to as creativity-intensive processes (Seidel, Rosemann and Becker 2008b). Creativity-intensive processes have been identified by comparative analysis (Strauss and Corbin 1998). That is, they have been systematically compared to non-creative or transactional business processes (Seidel et al. 2008b). The main distinction between transactional business processes and creativity-intensive processes can be seen in the fact that the latter ones have variance both in process structure and in outcome. Variance in process structure pertains to *how* something is done, whereas variance in outcome pertains to *what* is the result. Creativity-intensive processes are characterized by the involvement of the so-called 4Ps, that is, *creative person*, *creative product*, *creative process*, and *creative press* or *environment* (Isaksen 1987; Rhodes 1961). The *creative product* (Firestien 1993) corresponds to the business object in a business process that is characterized by novelty. *Creative persons* are actors within a business process. The activities within a business process are *creative processes* (Brown 1989; Guilford 1967; Osborn 1957). Based on the definition of business processes as a logical sequence of activities, creative processes as parts of business processes are referred to as *creative tasks*. The *creative environment* is constituted by the organizational context including resources, information systems, etc. As creativity-intensive processes contain both creative and non-creative elements, the creative parts of a process we refer to as *pockets of creativity*.

RESEARCH METHOD

This research is interpretive in nature. We have collected data within interpretive case studies (Klein and Myers 1999). Case study partners employ what has been defined as creativity-intensive processes and their core primary activities target the creation of creative products as defined above. Thus, organizations are chosen, where “the process of interest is ‘transparently observable’” (Eisenhardt 1989). Table 1 provides an overview of case study organizations and interview partners.

Organisation	Approx. Number of Employees	Main Areas	Interview Partners
Case Study Organization I	Approx. 120	Post Production: Visual Effects Production	CEO, CTO, Head of 3D, Technical Directors, Compositors, Lighter, Coordinator
Case Study Organization II	Approx. 150	Post Production, TV Commercials	Management, Head of Technical Engineering, Technical Directors, Visual Effects Specialist, Colorist
Case Study Organization III	40 employees, 100 full-time postgraduate students, 5000 students attending short courses	Teaching	Director, Head of Editing, Producer, Post Production Supervisor

Table 1. Case Study Organizations

The organizations we have investigated belong to the creative industries. Organization I is a production company for visual effects. Visual effects are computer generated artifacts that are combined with conventional film material. Processes in this industry are very much characterized by creativity and the involvement of creative people. Organization II is a so-called post-production company. Post-production refers to the stage within film production where footage and audio are joined to a “flowing coherent piece” (Kellison 2006). Organization III is a teaching body in the field of film, radio, and television. The organization conducts production projects for film and television and, thus, has detailed process knowledge in the different stages of the film industry value chain.

Data collection took place over a period of approximately one year. A total number of 27 people were interviewed. The main sources of inquiry were semi-structured interviews, process analysis, and document analysis. The interviews were recorded, transcribed and coded. That is, material from different sources and cases has been connected to exemplify concepts. Process analysis comprised of the as-is analysis of creativity-intensive processes (Seidel et al. 2008b). It is essential to this study that data collection, coding, and analysis overlap (Strauss and Corbin 1998). Memoing (Miles and Huberman 1994) has been used throughout this iterative and highly interwoven process. Consequently, we can distinguish between two types of data this study relies on: first, data has been collected by the researcher through interviews and other data collection techniques and, second, the researcher’s interpretations of these data. Our understanding of the concept of creative risk has been further

informed by literature. We have particularly drawn from the work of Amabile who has identified creative thinking skills, expertise and motivation as the main factors that enable people to be truly creative (Amabile 1990, 1998).

Our interpretations are based on multiple methods. The interview findings were checked against the findings within process modeling and document analysis. For example, evidence for so-called approval processes that are applied for risk mitigation could be found in all three case organizations and was reinforced by process models that indicated that creative sections in business processes are succeeded by different types of approvals (Seidel et al. 2008b).

STUDY RESULTS

The concept of creative risk

Creative tasks are closely linked to creative risk. They are inherently connected to high variance of possible outcomes which is due to the fact that being creative means to be original and come up with novel ideas and solutions. Our study suggests that there are a number of *causal conditions* mainly pertaining to the human factor that shape creative tasks and link them to the *probability of an unwanted consequence*. This leads us to the following definition:

Creative risks occur because of the existence of creative tasks within business processes. Creative tasks are linked to the probability of an unwanted consequence due to causal conditions mainly linked to the human factor and the nature of the creative process. This is mainly caused by the (intended) high variance of possible outcomes of creative tasks as well as the unpredictability of the underlying process.

Creative risk may be classified as a specific instance of one or several risk categories proposed by existent risk management frameworks. For instance, in accordance to Levine creative risk may be regarded as either operational or compliance risk (Levine 2004). However, as our case studies have shown, there is need for a specific perspective onto risks in creativity-intensive processes. Creative organizations employ various strategies and actions to handle and control the phenomenon of creative risks. In the following we describe causal conditions, (unwanted) consequences as well as these strategies along with exemplary case study evidence.

Causal conditions: Why do creative risks occur?

The causal conditions we have identified are based on case study findings as well as on the related literature (Amabile 1990, 1998). Within our case studies we identified three main conditions that shape creative tasks and lead to creative risk: weak requirements specifications, too much creative freedom, and wrong resource allocation. These conditions directly pertain to particular creative tasks. As Amabile identifies expertise, motivation and creative thinking skills as the main factors that make people being creative, there are also causal conditions directly linked to creative persons carrying out creative tasks: lack of knowledge, lack of motivation and lack of creative thinking skills. These conditions could also be supported by our case study findings, as shown by the exemplary evidence we provide below.

- **Weak requirements specifications:** Weak requirements specifications of a creative product allow a high variance of possible outcomes. This may lead to outcomes that do not satisfy the customer. Thus, weak requirements specifications lead to increased creative risk.
- **Too much creative freedom:** Granting creative persons too much latitude to alter process or product can lead to unwanted consequences. The process owner (creative supervisor) has to ensure that everyone works towards one goal. For example, a creative director stated that “you have to give people latitude to be creative, but not that creative that everybody is driving the project in different ways and it falls over.” Interestingly, too much latitude can even be linked to another unwanted consequence, as it can prevent people from being creative! This has been supported by our case study findings as well as by literature. For example, a design-coordinator from a post-production company said that “it’s good to have that latitude, but often they come up with some very creative solutions because they are under time pressure”.
- **Wrong resource allocation:** Deficient resource allocation can hamper creativity and lead to unwanted consequences. For example, a lack of resources can even kill creativity as creative people invest their creativity in accessing the required resource. (Amabile 1998)
- **Lack of knowledge / expertise:** As stated by (Amabile 1998), expertise is one of the key factors that enable persons to be creative. A creative director said that “... creativity can still be drawing together other things that have been quite pre-determined, you know, but putting them into a new arrangement. [...] Everything you draw on, everything I draw on in my creativity comes from somewhere. So it’s already been created somewhere...”. A lack of knowledge / expertise can prevent people from being creative.

- **Lack of motivation:** In fact, motivation is seen as one of the most important factors. Interestingly, motivation of creative persons often cannot be fostered by incentives that might work for non-creative persons. (Amabile 1998) refers to intrinsic motivation as an “inner passion to solve the problem at hand” that “leads to solutions far more creative than do external rewards, such as money”. Consequently, conventional incentives may not be appropriate to foster creativity.
- **Lack of creative thinking skills:** This is another causal condition clearly pertaining to the abilities of the creative person. It refers to a creative persons “capacity to put existing ideas together in new combinations.”(Amabile 1998)

Consequences: What unwanted outcomes occur because of creativity?

As our data suggests, consequences can be grouped into three main classes: loosing control of process, low product quality and lack of external compliance. However, the three groups are highly interwoven, as problems with the product often lead to a loss in control of process and can also lead to a lack of compliance. In the previous section we have already implicitly mentioned consequences of creative tasks that are part of creative risks. It is of particular interest that creative tasks may have unwanted consequences that cannot be observed directly. That is, the unwanted consequences are not ‘obvious’. We can distinguish the following types of unwanted consequences:

- **Loosing Control of Process:** Loosing control of process means loosing control of time and budget. There are various causes that lead to this unwanted consequence. Prominent examples are too much freedom of creative persons, a lack of expertise or deficient resource allocation.
- **Low Product Quality:** The consequence of low product quality can lead to customer dissatisfaction. Customer dissatisfaction occurs when the customer’s expectations are not fulfilled. This may have various reasons such as weak requirements specifications or simply different perceptions of creativity and aesthetics. Low quality of creative products can be a consequence that is – due to the creative nature of the product – difficult to detect. Let us just think of a product that may look fine at first sight but does not meet customer expectations due to different perceptions of aesthetics and creativity. However, these unwanted consequences could have been avoided, if customers would have been involved early in review processes, for example. If low product quality is detected within a process, another consequence may be additional process-steps: If a creative product does not fulfill a stakeholder’s expectation, in many cases the process has to be re-done. Obviously, this requires additional time and higher budget. Therefore, there is a close relationship to the risk of loosing control of process. In the worst case, low product quality can lead to the failure of a project.
- **Lack of External Compliance:** Due to the unpredictability of the outcome of creative tasks (the creative products) it can be difficult to ensure external compliance. For example, a film could be too sexually explicit for a particular target audience or violate governmental policies. A lack of external compliance can lead to a loss in reputation or even to lawsuits which may then result in great financial loss, for example. The reasons for a lack of external compliance are manifold. A lack of expertise of the creative persons as well as weak requirements specifications or too much creative freedom can lead to this type of unwanted consequence.

Strategies / Actions: How do organizations handle creative risk?

Organizations from the creative industries employ different strategies to handle the phenomenon of creative risk. In the following we introduce different strategies. In literature, the following types of risk handling mechanisms are proposed: mitigation, avoidance, transfer, acceptance / assumption (Zur Mühlen and Rosemann 2005). We utilize this framework to classify the different risk handling strategies that are employed by organizations within the creative industries. The strategies we are proposing fall into the categories of mitigation and avoidance.

- **Approval Processes (Risk Mitigation):** Approval processes are a means to ensure that the creative product meets the requirements. It can be distinguished between quality assurance (technical aspects) and creative reviews (does the product meet the creative expectations?) As a film producer has said, “the timing of feedback is crucial, particularly with early creativity.” Approval processes are quite a complex strategy, as the process owner has make different decisions, such as: when should the approval happen? Who should be invited/ involved? Do we have to meet physically? This is a strategy on process level.
- **Showing References (Risk Mitigation):** This strategy is somewhat similar to approval processes, but less formal. Showing references to the customer is a strategy to facilitate communication with the customer and to make sure that the customer’s expectations are met. A design coordinator from a post-production company put it as follows: “And I think a lot of the time you are dealing with people who aren’t very visual; so the more stimulus you give to them at the beginning, the more style frames, the more references, the more ale they are to see what you are trying to tell them ...”.

- **Continuous Communication (Risk Mitigation):** Continuous communication ensures that the project team works towards one aim. Thus, this strategy aims to mitigate variance that is caused by weak requirements specifications as well as creative freedom.
- **Characterizing Pockets of Creativity (Risk Avoidance):** Resource allocation is one of the key issues when managing creative processes and also a key issue in handling potential creative risk. As Amabile states, the main factors that lead to creativity are expertise, thinking skills and motivation (Amabile 1998). Both expertise and thinking skills are abilities of creative persons. Consequently, assigning the right persons to the right tasks is a key issue to avoid unwanted consequences such as creative products that do not meet customer expectations. The baseline for resource allocation is set by characterizing Pockets of Creativity. This enables the process owner to identify required resources as well as the required skills of creative persons. Thus, good resource allocation is a means to mitigate risk that is associated with negative and unwanted outcomes.
- **Allowing Creative Freedom (Risk Avoidance):** Giving creative people creative freedom or latitude means to grant them the right to alter product and process. Granting freedom is an important factor in fostering motivation and, thus, to avoid a lack of motivation.
- **Knowledge Management (Risk Mitigation):** As (previous) knowledge is an important factor that influences creativity (Amabile 1998), knowledge management is a strategy to make explicit knowledge available to fulfill creative tasks (Seidel, Müller-Wienbergen, Rosemann and Becker 2008a). Providing creative people with required knowledge can help to mitigate a lack of expertise. As additional knowledge may provide additional entry points into a person’s cognitive network, this strategy can also mitigate a lack of thinking skills by providing stimuli (Seidel et al. 2008a).

A framework for managing creative risk

The generic risk management framework proposed by (Kliem 2000) comprises of the three processes risk identification, risk analysis and risk control. The framework we introduce here does not pertain to the entire process of risk management but to the relationship between causal conditions, consequences and strategies to handle this specific type of risk. Figure 1 depicts the framework for managing creative risks within business processes.

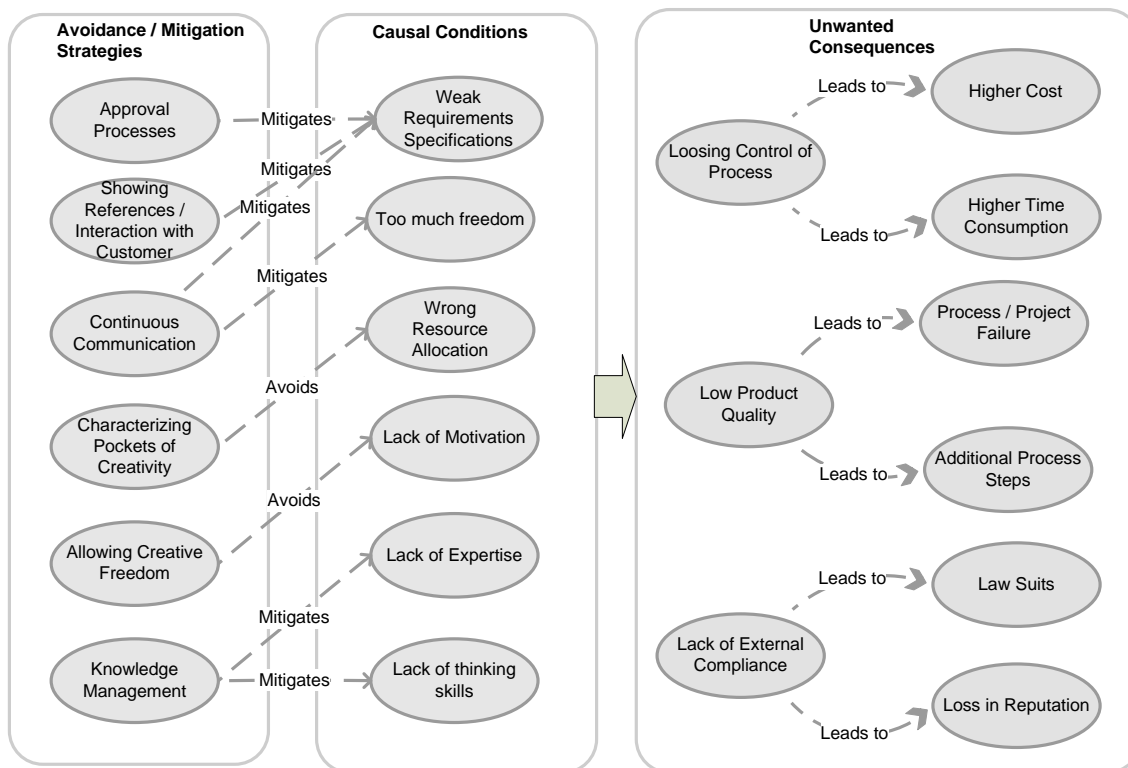


Figure 1: Framework for Managing Creative Risk within Business Processes

We do not claim the framework being complete. Due to the interpretive nature of this research relevant conditions and relationships may not be accounted for. Moreover, we have focused on the most prominent and obvious relationships we have found strong support for within our data or within the literature.

CONCLUSION

Contribution

This research is of high relevance to both academia and practice. First, we contribute to the IS Body of Knowledge by introducing the concept of creative risk. To do so, we have shown how creative risks differ from conventional risks and have further identified what strategies organizations have developed to mitigate and avoid creative risk. Second, we argue that providing organizations with means to characterize the risk that is linked to a creative task will enable them to apply appropriate strategies to handle these risks. What strategy is to be utilized in what situation very much depends on the particularities of the underlying creative task. As our research has further shown, creative risks are of particularly high importance to organizations: As they occur in what we refer to as Pockets of Creativity, the risk management strategy has high impact on the overall business success. Pockets of Creativity are those sections within business processes where the organization is truly innovative and creates competitive advantages.

Limitations

The results presented in this paper are based on a limited number of case studies within a particular domain. Due to the interpretive nature of this research we cannot claim that the phenomenon of creative risk has been described completely. Potentially relevant conditions, strategies and consequences may not have been accounted for.

Future Research

At this stage, generalizations beyond the analyzed domain are difficult to make. Thus, we propose two strategies to further research: First, we suggest using the framework we have introduced as a sensitizing device to collect further empirical data. Thus, we will ask the question of whether strategies that are employed by highly creative organizations can also be applied by organizations from various domains that increasingly rely on creativity. Second, we propose to further engage with the existent literature. Even though we have considered existent theory to identify relevant concepts, we do not claim to have done so exhaustively.

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REFERENCES

1. Amabile, T.M. (1990) Within you, without you: The social psychology of creativity and beyond, in M.A. Runco and R.S. Albert (Eds.) *Theories of creativity*, Sage, Newbury Park, 61-91.
2. Amabile, T.M. (1998) How to Kill Creativity, *Harvard Business Review*, 76, 5, 76-87.
3. Arrow, K.J. (1965) Aspects of the Theory of Risk Bearing, Yrjo Janssonin, Helsinki, Finland.
4. Benaroch, M., Lichtenstein, Y. and Robinson, K. (2006) Real Options in Information Technology Risk Management: An Empirical Validation of Risk-Option Relationships, *MIS Quarterly*, 30, 4, 827-864.
5. Brown, R.T. (1989) Creativity - What Are We to Measure?, in J.A. Glover, R.R. Ronning and C.R. Reynolds (Eds.) *Handbook of Creativity. Perspectives on Individual Differences*, New York, 3-32.
6. Eisenhardt, K.M. (1989) Building Theories from Case Study Research, *Academy of Management Review*, 14, 4, 532-550.
7. Firestien, R.L. (1993) The Power of Product, in S.G. Isaksen, M.C. Murdock, R.L. Firestien and D.J. Treffinger (Eds.) *Nurturing and Developing Creativity. The Emergence of a Discipline*, Norwood, New Jersey, 261-277.
8. Guilford, J.P. (1967) *The Nature of Human Intelligence*, McGraw-Hill, New York et al.
9. Isaksen, S.G. (Ed.) (1987) *Frontiers of creativity research: Beyond the basics*, Bearly Limited, Buffalo, NY.

10. Kellison, C. (2006) Producing for TV and Video, Burlington, Oxford.
11. Klein, H.K. and Myers, M.D. (1999) A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems, *MIS Quarterly*, 23, 1, 67-94.
12. Kliem, R.L. (2000) Risk Management for Business Process Reengineering Projects, *Information Systems Management*, 17, 4, 71-73.
13. Levine, R. (2004) Risk management systems: Understanding the need, *Information Systems Management*, 21, 31-37.
14. March, J.G. and Shapira, Z. (1987) Managerial Perspectives on Risk and Risk Taking, *Management Science*, 33, 1404-1418.
15. Miles, M.B. and Huberman, A.M. (1994) Qualitative Data Analysis. An Expanded Sourcebook, (2nd ed.), Sage Publications, Thousand Oaks, London, New Delhi.
16. Osborn, A.F. (1957) Applied Imagination. Principles and procedures of creative problem-solving, The Creative Education Foundation Press, New York.
17. Peltier, T.R. (2004) Risk Analysis and Risk Management, *The EDP Audit, Control, and Security Newsletter*, 32, 3, 1-17.
18. Remenyi, D. and Heatfield, A. (1996) Business Process Re-Engineering: Some Aspects of How to Evaluate and Manage the Risk Exposure, *International Journal of Project Management*, 14, 6, 349-357.
19. Rhodes, M. (1961) An analysis of creativity, *Phi Delta Kappan*, April, 305-310.
20. Seidel, S., Müller-Wienbergen, F., Rosemann, M. and Becker, J. (2008a) A Conceptual Framework for Information Retrieval in Pockets of Creativity", in *Proceedings of the Multikonferenz Wirtschaftsinformatik*, München.
21. Seidel, S., Rosemann, M. and Becker, J. (2008b) How Does Creativity Impact Business Processes?" in *Proceedings of the European Conference on Information Systems*, Galway, Ireland.
22. Strauss, A.L. and Corbin, J. (1998) Basics of Qualitative Research, Grounded Theory Procedures and Techniques, Sage, London.
23. Walsham, G. (1995) Interpretive Case Studies in IS Research: Nature and Method, *European Journal of Information Systems*, 4, 74-81.
24. Zur Mühlen, M. and Rosemann, M. (2005) Integrating Risk in Business Process Models", in *Proceedings of the 16th Australasian Conference on Information Systems*, Sydney, Australia.